Draft Policy Option TLU-6: Biofuel Expansion

Option 3.3.3 from the Policy Matrix.

1. Policy Description:
    a. Lay description of proposed policy action: Expand the availability and use of biofuels throughout the State, including biodiesel, cellulosic ethanol, CNG, and LPG. Expansion should be on a voluntary basis, with programs targeted in best possible applications where they are most likely to be successful and with a certainty of obtaining significant GHG emission reductions. For example, a B20 biodiesel program (20% biodiesel blended with 80% petroleum diesel) in a truck fleet with older vehicles (e.g., without diesel particulate filters), where trucks will be traveling in warmer parts of the state or a B20 biodiesel school bus program should achieve success. Programs should ensure that the fuels meet all applicable quality standards (see policy 3.3.5). ADD EXAMPLE OF WHERE ETHANOL PROGRAM IS MOST LIKELY TO BE SUCCESSFUL. Emergency vehicles and snow removal vehicles should not be included in such programs.
    b. Policy Design Parameters:
        i. Implementation level(s) beyond BAU: With a good education component and focusing on applications with the greatest likelihood of success, a voluntary biofuel expansion program could lead to E85 having a penetration rate of X% of total gasoline consumption in the state and B20 having a penetration rate of X% of total diesel consumption in the state.
        ii. Timing of implementation: Implement when product is sufficiently available and after standards are in place to regulate product quality. Timing will vary based on fuel.
        iii. Implementing parties: industry and state
        iv. Other
    c. Implementation Mechanism(s): Indicate which mechanisms are to be used, and describe the specific approach that is proposed
        i. Information and education: An information and education component will be needed to let consumers know of product availability and associated performance issues, as well as the potential benefits of using these fuels.
        ii. Technical assistance
        iii. Funding mechanisms and or incentives: Several tax incentives already apply to renewable fuels. A 10% ethanol-blended gasoline receives a 5.3 cent per gallon reduction from the federal excise tax on gasoline. This equates to a 53 cents per gallon subsidy for neat (100 %) ethanol. Soy-based biodiesel receives a $1.00 tax credit, non-soy based biodiesel

receives a 50 cent/ gallon tax credit. In addition to the excise tax exemption, Biodiesel was provided an exemption through the American Jobs Creation Act signed by the President in 2004. No new funding incentives are being proposed for this option.

iv. Voluntary and or negotiated agreements: Program should be set up on a strictly voluntary basis.

v. Codes and standards: In order for this program to be successful, the standards and enforcement recommended under policy 3.3.5 (Standards and Enforcement for Biodiesel and Ethanol Fuels) should be in place first. In addition, for E85 to be available in the Phoenix area, HB2590 must be in place.

vi. Market based mechanisms

vii. Pilots and demos

viii. Research and development

ix. Reporting

x. Registry

xi. Other?

2. BAU Policies/Programs, if applicable:

   a. Description of policy/program #1: Need to itemize current programs in State

   b. The Arizona use tax does not apply to the following: natural gas or liquefied petroleum gas used to propel a motor vehicle; AFVs, if the AFV was manufactured as a diesel fuel vehicle and converted to operate on an alternative fuel; and equipment that is installed in a conventional diesel fuel motor vehicle to convert the vehicle to operate on an alternative fuel. (Reference Arizona Revised Statutes 42-5159 and House Bill 2155, 2005)

   c.

3. Types(s) of GHG Benefit(s): GHG benefits will depend on biofuel feedstock and production process used. An E85 program, with E85 used in vehicles designed for E85 fuel can reduce GHG emissions by 20%. Biodiesel reduces net lifecycle CO2 emissions by 78% compared to petroleum diesel. B20 reduces net lifecycle CO2 emissions by 16% (Sheehan et atl. May 1998. *A Life Cycle Inventory of Biodiesel and Pertoleum Diesel for Use in an Urban Bus*.) Benefits may differ for older trucks versus those meeting 2007 emission standards. The effect of biodiesel on new engine standards, and with low sulfur diesel is questionable.

4. Types of Ancillary Benefits and or Costs, if applicable:
    a. Increased supply of biofuels reduces our foreign fossil fuel dependency. Must also account for energy used to produce these fuels.
    b. Biodiesel can reduce emissions of HC, PM, and CO in older vehicles (emission reduction potential reduced with new technology engines equipped with catalysts and diesel particulate filters). EPA has reported that the use B20 biodiesel can lead to a 21% reduction in HC, 11% reduction in CO, and a 10% reduction in PM. Toxic emission reductions can also be significant. However, biodiesel can lead to increased exhaust emissions of NOx and some air toxics, depending on feedstock and blend level. EPA reports a 2% increase in NOx emissions for B20 blends. Effects on newer diesel vehicles are likely to be different.
    c. Biodiesel reduces energy content which reduces fuel economy. 0.9-2.1% reduction for B20 and 4.6-10.6% reduction for B100.
    d. Biodiesel can lead to operational problems, particularly at low temperatures, but as a benefit, increases the lubricity of diesel fuel.
    e. E85 can reduce emissions of VOC, CO, PM, and NOx. However, E85 also leads to reduced fuel economy.
    f. Biodiesel typically costs more than diesel (EPA estimates a 30 to 40 cents per gallon increase.) E85 also generally costs more than gasoline.

5. Estimated GHG Savings and Costs Per $MMTCO_2e$:
    a. Summary Table of:
        i. GHG potential in 2010, 2020
        ii. Net Cost per $MMTCO_2e$ in 2010, 2020
    b. Insert Excel Worksheet showing summary GHG reduction potential and net cost

6. Data Sources, Methods and Assumptions:
    a. Data Sources
    b. Quantification Methods
    c. Key Assumptions

7. Key Uncertainties if applicable:
    a. Benefits
    b. Costs

8. Description of Ancillary Benefits and Costs, if applicable:
    a. Description of issue #1
    b. Description issue #2
    c. Etc.

9. Description of Feasibility Issues, if applicable:
    a. Description of issue #1
    b. Description of issue #2
    c. Etc.

10. Status of Group Approval:
    a. Pending
    b. Completed

11. Level of Group Support:
    a. Unanimous Consent
    b. Supermajority
    c. Majority
    d. Minority

12. Barriers to consensus, if applicable (less than unanimous consent):
    a. Description of barrier #1
    b. Description of barrier #2
    c. Etc.